

MASTER TASK LIST AND CAREER TRAINING PLAN: A TRAINING MANAGEMENT TOOL FOR MANAGERS AT ALL LEVELS

NAVY TRAINING CONTINUUM

In early 1996, the Chief of Naval Operations (CNO) set three policy goals: effect a 20 percent reduction in initial school training, use more available technologies within that training, and transition more training to ships. In response to this guidance, Commander of the Atlantic Fleet proposed to the CNO that the Navy "should change our target for in-depth education and apply not only 'Just in Time' training but also 'Just Enough' training. We then get our young sailors to ships quickly, with high expectations, high enthusiasm and an eagerness to learn. We can follow them with emerging training technologies wherever they go, at a fraction of the cost of the infrastructure we pay for now." (CINCLANTFLT Message 151330ZAPR96). With 50-70 percent of sailors leaving the Navy after their first four-year enlistment, a significant amount of the Navy's investment in education and training is lost (see Figure 1).

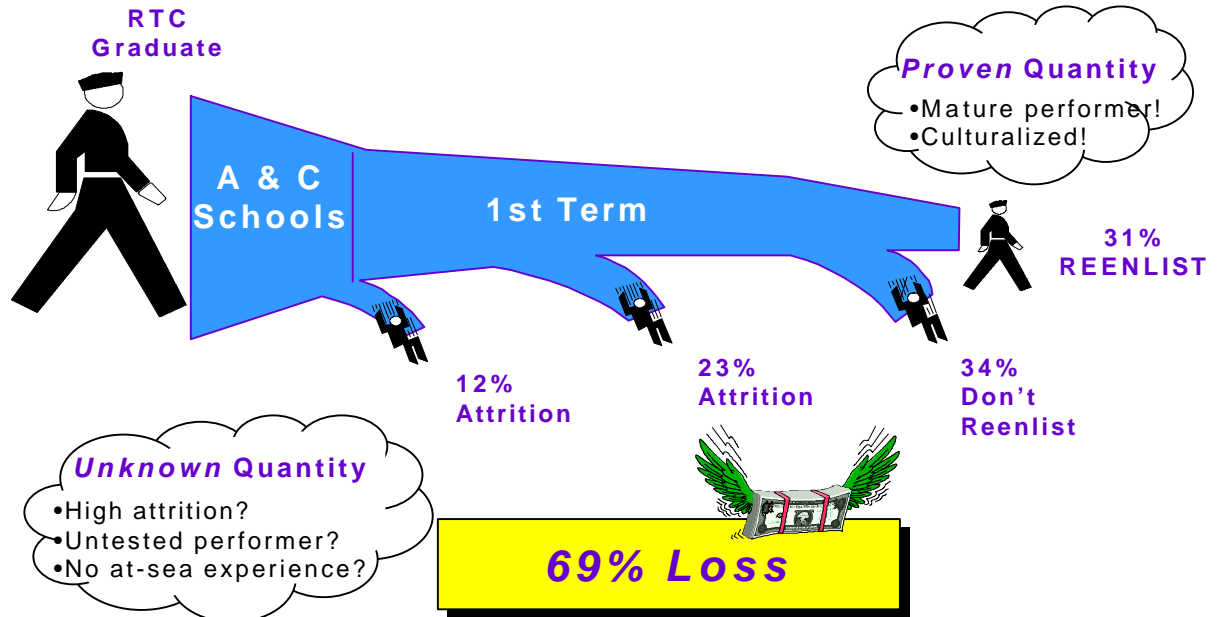


Figure 1. When are we training?

CINCLANTFLT reported that the Navy spent 4.8 million dollars and 4127 man-weeks to provide formal training at 109 schools for only 64 enlisted members in one department on one cruiser. Forty three percent of that training was lost on first-termers that did not re-enlist.

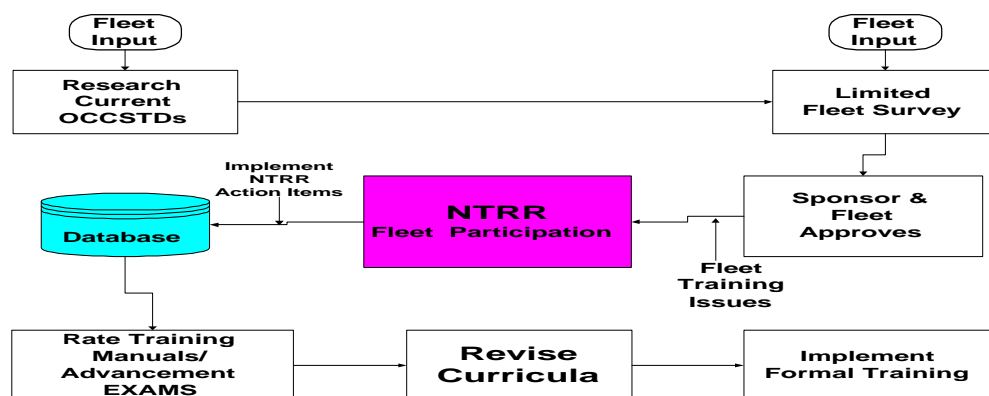
In June 1996, CNO established a Training Vision Executive Steering Committee to develop and implement a fundamental new strategy for Navy training. This group was to make a fundamental change to who, when and how much the Navy educates and trains first-time enlistees. The goal was to blend "just enough" and "just in time" training philosophies in apprentice schools together with a conceptual shift toward apprentice-journeyman-master relationships. The goal was to educate Apprentice sailors less at initial schools, while providing Journeyman sailors more training at advanced schools. Cutting apprentice schools by 50 to 75 percent, allowed additional classroom time to be devoted to re-enlistees - the journeymen (the proven quantities). This new strategic plan for training required a comprehensive **cradle to grave assessment** of all

the knowledge, skills and tasks a sailor must master for any given Navy rating. As ships become more complex and automated, the training requirement per person increases even while training resources grow smaller. Managers could achieve immediate savings just by identifying and **eliminating inefficiencies** in training.

Training is not the sole responsibility of a single agent within the Navy. It is instead a responsibility shared by the Chief of Naval Education and Training (CNET), with 17 separate sponsors and multiple fleet training groups. To revise the way the Navy trains requires **close coordination** among OPNAV sponsors, CNET, and the fleet. There was a need to identify and achieve consensus on a comprehensive list of every one of the tasks an individual in an occupation was expected to do throughout a career, and then use that list of tasks to define: 1) what must be trained, 2) at what point in a sailor's career that training should occur, 3) where it should be trained and 4) to what knowledge or skill level the training should be conducted. The Master Task List and Career Training Plan (MTL/CTP) development process provides a vehicle to accomplish this. It also provides a process for distinguishing among apprentice, journeyman, and master level tasks, and for determining which tasks are most appropriate for formal, non-resident, fleet or on-the-job training. Because it includes a process for **validating and maintaining** the database, it provides the manager a means of ensuring the accuracy of the data and assessing the impact of decisions. With this information, managers can move toward achieving the CNO's goals. The Master Task List and Career Training Plan together provide the manager with the data needed for making these critical decisions.

TRADITIONAL PROCESS – OCCSTD/NTRR

The traditional process for identifying training requirements has been based on Occupational Standards (OCCSTD) and the Navy Training Requirements Review (NTRR) (see Figure 2). The OCCSTDs are restricted to common functions across a rating and do not address the rating's Navy Enlisted Classifications (NEC) requirements, thus failing to reflect the full range of rating requirements. They are updated every three to five years (relying heavily on survey questionnaires), and fail to reflect emerging requirements. By directive, the NTRR program conducts systematic reviews of enlisted training and provides direct warfare sponsor oversight to identify and correct deficiencies in Navy Training. The major function of a NTRR is a review of curricular materials to ensure essential information is included, verify that it is technically accurate and identify any new training requirements. NTRR conferences are held every 3 to 5 years. Because only formal training courses have published objectives and instructional material, NTRRs concentrate almost solely on the formal schools. For many Navy ratings, more than half of the training required by technicians to perform their jobs is provided by organizations that are not subject to the NTRR review process. Current data provided in support of the NTRR program does not reflect a Navy rating's full training requirement, nor does it document training provided on a regular basis outside the formal schoolhouse. It has minimal involvement (if any) from the commands which provide equipment and systems as well as logistics and technical support to the fleet. The average NTRR takes approximately 4 days and hosts two to three working-groups with a total of 75 to 100 fleet personnel. Still, the final outcome addresses only a portion of



the total Training Continuum.

Figure 2. OCCSTD/NTRR Process

REVISED PROCESS – MTL/CTP/NTRR

The Master Task List/Career Training Plan (MTL/CTP) process is designed to support the NTRR process and provide the manager with the information needed to align and sequence training as well as ensure that accurate training is being provided at the right point in a career. It requires participation by the Sponsors (requirements and funding), the equipment and systems commands, the Trainers (resident and non-resident training providers) and the Fleet. Development of the MTL/CTP is accomplished in four phases. – **Phase I** development of a Preliminary Master Task List (PMTL); **Phase II**, validation of the PMTL and development of the Career Training Plan; **Phase III** analysis of the impact of the CTP; and **Phase IV** - CTP implementation and evaluation (see Figure 3).

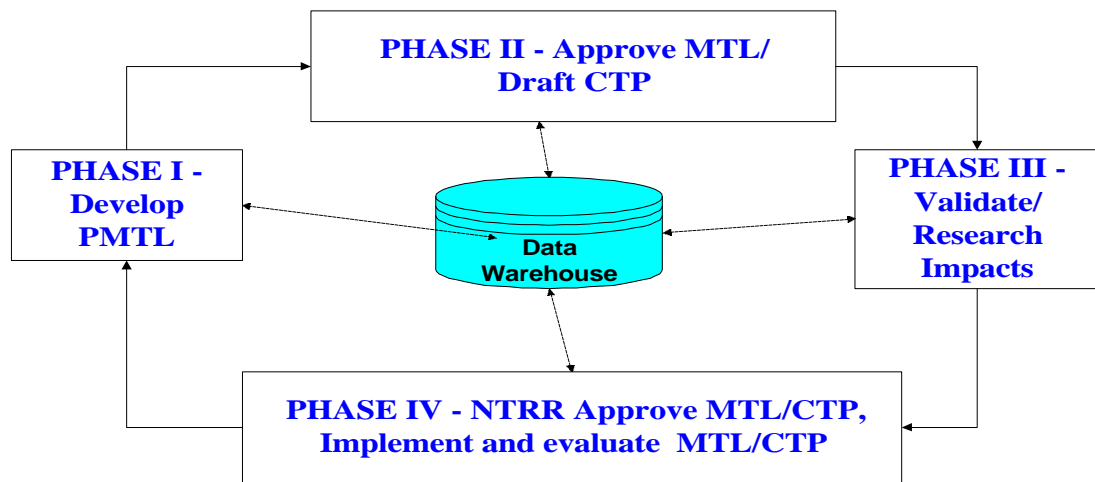


Figure 3. MTL/CTP Process.

To assist in the execution of this process it is essential that certain key terms are defined and agreed upon (see Table 1).

Table 1. Terms and Definitions

Apprentice	Possesses the skills needed to perform entry-level jobs and the knowledge necessary to support continued learning and skill development.
Journeyman	Possesses the skills needed to perform complex tasks and can mentor an apprentice.
Master	Performs and supervises tasks in an occupation, and manages technical and professional development of subordinates.
Master Task List	Identifies every task an individual in an occupation is expected to perform throughout a career.
Career Training Plan	Defines by task what must be trained, at what point in a sailor's career, where it should be trained and to what knowledge or skill level.
Training Continuum	Identifies all training in terms of training pipelines and sea/shore rotation.

Phase I - Development of the PMTL is accomplished in three steps (See Figure 4). *Step One*: use existing references such as Occupational Standards, Personnel Qualifications Standards, Naval Standards, Job Qualifications Standards, and Course Training Task Lists and Objectives to develop an initial list of tasks. *Step Two*: group tasks into functional areas, by job titles or equipment for ease of review and validation. *Step Three*: Identify all relevant SYSCOM technical codes and provide the PMTL for review to ensure all equipment and programs are identified.

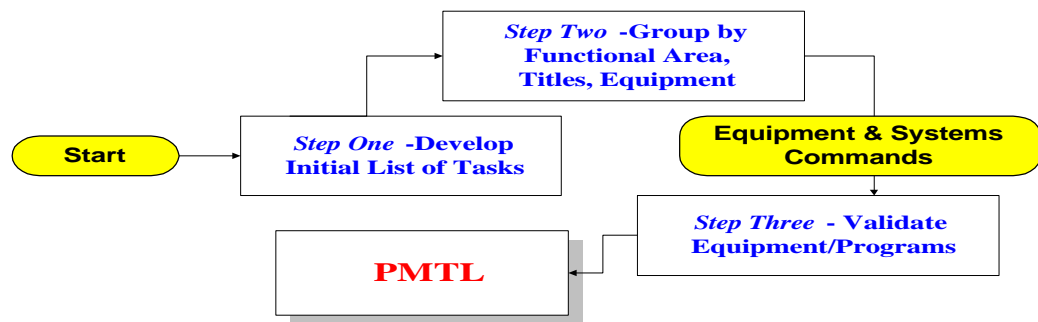


Figure 4. Develop MTL

Phase II – Validation of the PMTL and development of the CTP is the responsibility of the Fleet Commands. It involves bringing together Subject Matter Experts (SME) who review the PMTL task by task and provide proficiency levels, training location, and training and testing priorities (see Figure 5). *Step One* for the Fleet SME is reviewing the task list to ensure that all tasks are identified. *Step Two* involves assigning skill and knowledge levels for each task within the Apprentice-Journeyman-Master framework. The milestones for this framework can generally be defined as paygrade E-4 (when the Sailor qualifies as Apprentice), paygrade E-6 (when the Sailor qualifies as Journeyman) and paygrade E-7 (when the Sailor qualifies as Master).

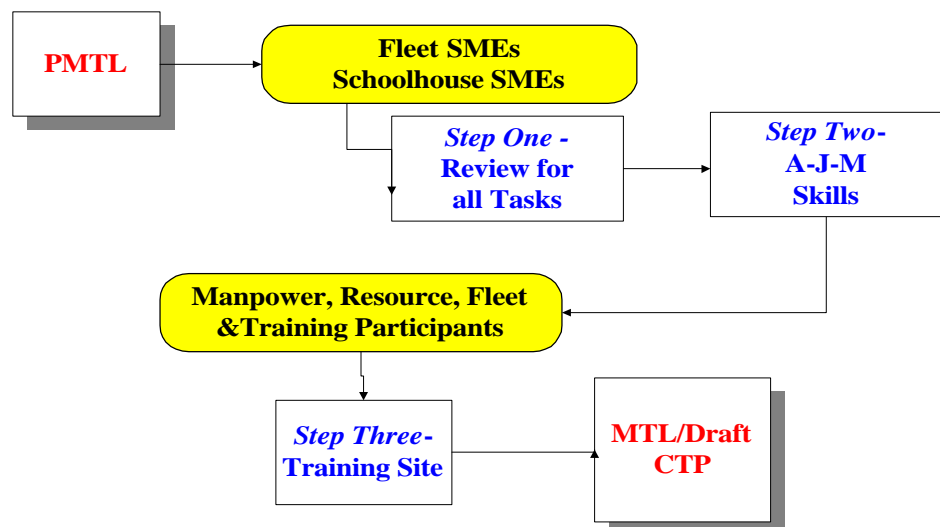


Figure 5. Phase II – Approve MTL/Develop CTP

Each task consists of a knowledge element and a skill component that can be acquired separately through a combination of formal and on-the-job training or experience. Identifying the skill and knowledge proficiency level at the beginning and middle of each tour establishes training requirements. Agents can be assigned responsibility for training the required knowledge and skill levels defined in Table 2.

Table 2. Skill and Knowledge Level Definitions

SKILL LEVEL	
1. Extremely Limited	Can do simple parts of the tasks with direct supervision.
2. Partially proficient	Can do most parts of the task with limited supervision.
3. Competent	Can do all parts of the task with no supervision.
4. Highly Proficient	Can do complete task quickly and accurately, to include training and supervision.
KNOWLEDGE LEVEL	
A. Facts	Can identify parts, tools, terms, and simple facts.
B. Procedures	Can determine step-by-step procedures and explain relationships and general principles.
C. Operating Principles	Can explain why and when events occur, analyze facts, principles and draw conclusions.
D. Complete Theory	Can predict, identify and resolve problems, evaluate conditions, make proper decisions, and has ability to train others.

After the skill and knowledge levels are determined, a recommended optimum training location is assigned for each task in *Step Three* (see Table 3). The Training Agents will assess these recommendations during Phase III. Training and Testing Priority are then established using a three point scale: (1) Very High Priority, (2) Average Priority, and (3) Very Low Priority. The final step in Phase II is collecting the current training provided in the formal schools, Rate Training Manuals, correspondence courses, Computer Based Training (CBT), and by fleet and SYSCOM agents.

Table 3. Training Locations

LOCATION	
R - Resident	Schoolhouse training which includes any course with official Navy assigned course number.
F - Formal Non-resident	Standardized training conducted by print, CBT, video or facilitator, but not provided in a formal school setting (e.g., ICW, Correspondence Courses, etc.).
O - On-the-Job	One to one hands-on training conducted at the job site, within the lifelines of the ship by ship's force - usually situational based.
A - Afloat	Situational based, tailored training provided to ship's force by outside agencies (e.g., Afloat Training Group, Intermediate Maintenance Activity, Fleet Training Centers).
OF - Training Modules	Requirements identified by Fleet supervisors to assist in the knowledge portion of On-the-Job training (ICW, Correspondent Course Module, etc.).

Phase III - Analysis of the impact of the CTP begins with a comparison of proposed and current training (see Figure 6). *Step One* sorts the tasks by equipment or the functional areas identified in Phase I. Paired with the required skill and knowledge proficiencies by tour, this display brings together general, operational and maintenance tasks. *Step Two* develops an initial Training Continuum taking into consideration such things as existing training, proposed training; and training locations; alternative training (e.g., Interactive Courseware, Correspondence Courses); training capacity; and programmed resources. Fleet training is reviewed for duplication and other inefficiencies. Personnel Qualification Standards are reviewed to determine if tasks should be trained in formal schoolhouse setting or deferred for training and certification by Fleet supervisors. Technology interventions are explored to improve learning and increase efficiencies.

The impact of changing training requirements on training capacity, resource requirements and training support is assessed (*Step Three*). The Chief of Naval Education and Training and Fleet Commanders identify tasks they can train within their funding level. Resource sponsors assess the delta between proposed training and explore alternate funding prior to the NTRR Conference. Tasks, which cannot be accommodated through existing resources or by augmentation to funding levels, are forwarded to the NTRR Conference for resolution.

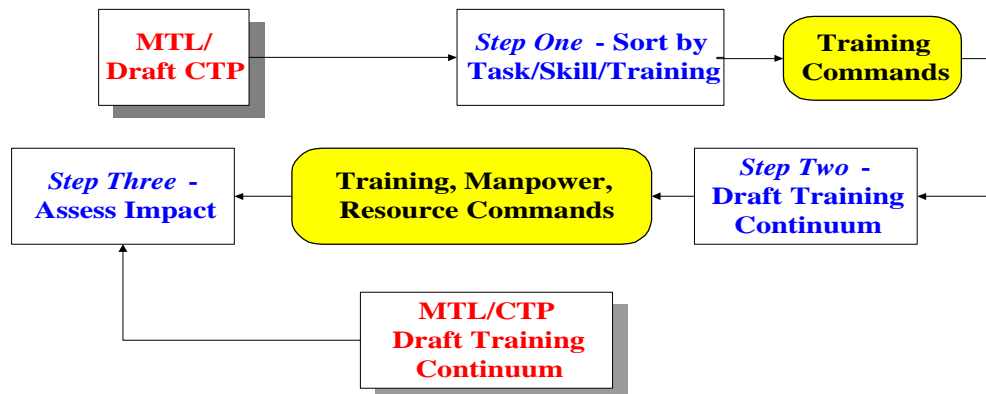
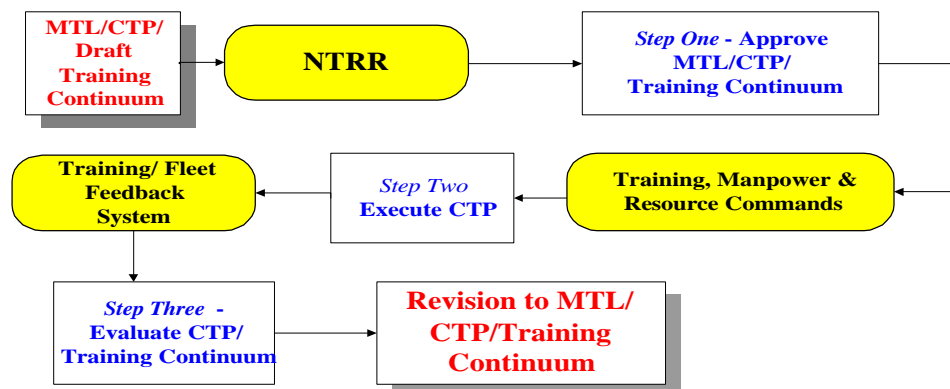


Figure 6. Phase III – Validate/Research Impact

Phase IV - CTP implementation and evaluation starts with the NTRR Conference where the MTL, CTP and Training Continuum are submitted for approval (see Figure 7). The NTRR Executive Committee (*Step One*) is presented with the findings and recommendations to make their decisions. Each proposed change is reviewed and approved or disapproved in one to two days. *Step Two* requires the training agents to develop POA&Ms to revise, develop, and implement the approved training. Evaluation of training execution (*Step Three*) is an ongoing process that is conducted through existing programs such as fleet feedback, audits, fleet assessments, Training Performance Evaluation Board (TPEB) reviews, safety reviews, and inspections. As a result of the MTL/CTP process, the current NTRR conference 3-year cycle can be reduced to 18-months (depending on the volatility of the rating). The process starts again with the SYSCOMS conducting a validation review of the Master Task List. The MTL is continually modified to reflect new equipment, systems and performance data. The TYCOMS review the Career Training Plan for accuracy, and to ensure Risk Assessment data, current maintenance and operational policies, and manning and mission changes are reflected. Manpower and resource sponsors assessed changes in manpower or funding levels that impact training requirements. These reviews occur several weeks to several months prior to the rating sponsor convening the NTRR conference. The NTRR addresses any resource delta and recommends changes to the CTP.

Figure 7. Phase VI - Implementation and Validation



MTL/CTP PROTOTYPE

The Gas Turbine Engine Technician (GS) was selected as the prototype rating the MTL/CTP process. During **Phase I**, over 1300 references and materials from 22 formal courses were used to identify approximately 9,500 tasks. These tasks were reviewed by Senior GS Technicians to eliminate redundant items. This reduced the list to approximately 2,500 tasks. These 2,500 tasks constituted the PMTL.

They were grouped into three major types - General, Equipment Specific, and Supervisory (See Figure 8) - and 21 functional areas (e.g., Safety, Gas Turbine Engines, Auxiliary Equipment, Management, Training, and Administration). In addition, 19 job titles were identified (e.g., Fuel and Oil King, LCAC Loadmaster, Propulsion Plant Operator).

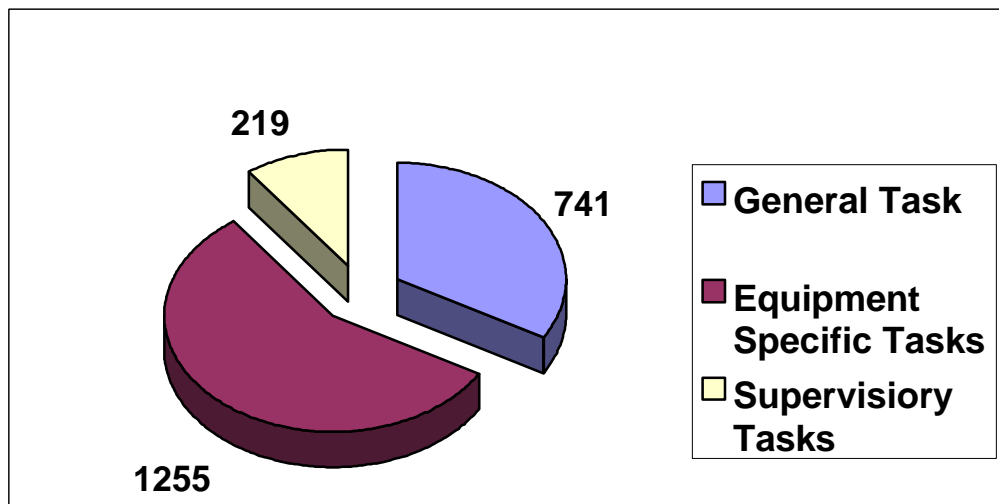


Figure 8 General Tasks

The SYSCOM review required coordination among 17 technical codes. The SYSCOMs are organized to support equipment, so reviewing the tasks grouped by functional areas proved difficult. The tasks were re-sorted by System, Sub-System and Equipment to facilitate their review. Approximately 1300 of the 2500 tasks were documented to specific platforms and equipment (see Figure 9).

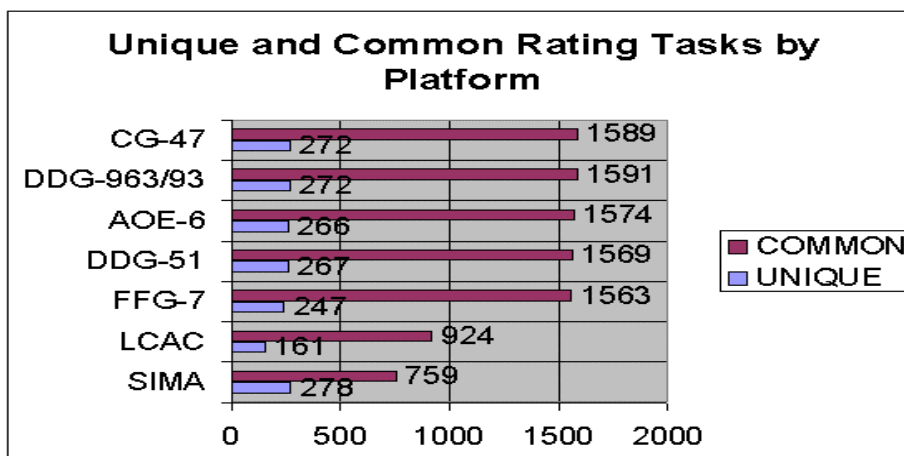


Figure 9. Tasks by Platform

The remaining tasks were general Navy tasks that did not apply to specific equipment. These tasks were found to be applicable to most Navy ratings and have been incorporated in subsequent MTL/CTP development projects.

To capture all formal, non-resident and fleet training, an electronic survey was developed and forwarded to 63 identified training sites currently providing training to GS Technicians. Each was requested to document the Skill/Knowledge levels, Course Identification Numbers, Objectives Numbers and Time spent to train each task on the PMTL. Response turnaround was longer than anticipated, due in part to difficulty in contacting all of the worldwide fleet sites providing GS training. Over 18,000 records were returned and merged into a single database. The analysis of this data indicated significant overlaps in training.

The TYCOMs handpicked 17 senior Gas Turbine Engine Technicians, each with experience on multiple platforms, to serve as the fleet SMEs for **Phase II**. The SMEs included GS Electricians, GS Mechanics and representatives from the LCAC (Landing Craft, Air Cushion) community (because of their uniqueness). The SMEs determined that in a 20-year career, GS Technicians do three sea tours. The first tour is approximately five years long and a GS is expected to be in paygrade E-4 by the end of it. In the second sea tour, the GS Technician is expected to be in paygrade E-6 and third sea tour in paygrade E-7. Because most GS Technicians work outside their rating during their shore tours (e.g., Recruiting or Instructor duty), only the Shore Intermediate Maintenance Activity (SIMA) assignments (which relate directly to GS rating tasks) were addressed. Thus requirements for Apprentice, Journeyman, and Master levels were established (see Figure 10).

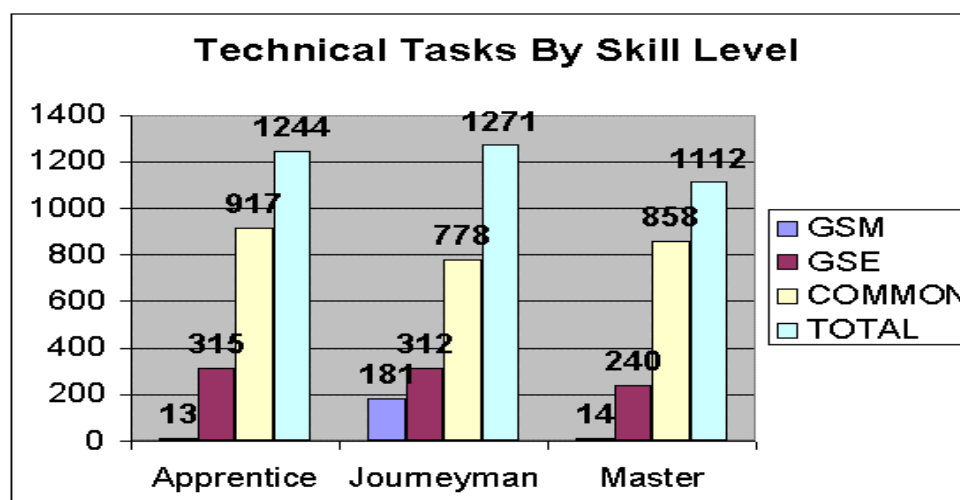


Figure 10. A-J-M Tasks

To identify the training requirements the Skill/Knowledge levels were identified at the beginning and middle of the First and Second Tours, and the beginning of Third Tour. A recommended training location (from formal resident training to OJT) was identified for each task. In addition, a responsible training agent was identified.

The CTP was reviewed during SME conference in which the original 17 SMEs were joined by other fleet and training command representatives. To facilitate their review, the CTP was sorted and tasks displayed by equipment and functional area for all training sites. Additionally, proficiencies were sorted and displayed by tour. This brought together both the operational and maintenance tasks for a system or piece of equipment. The Conference identified 91 training discrepancies for consideration at the NTRR Conference. Changes to

the Proposed Career Training Plan and current problems identified by the Fleet were addressed for resolution by higher authority. A proposed Training Continuum was developed which shifted advanced training into the second tour and eliminated the 6-Year Enlistment program in favor of providing advanced training for second tour personnel.

During **Phase III**, the responsible agents evaluated the proposed training changes. The MTL, CTP, proposed Training Continuum and proposed changes were submitted to the GS NTRR Executive Committee. Each proposal was reviewed and approved/disapproved in one day. Small working groups made up of SMEs who had been involved in the entire process were available to answer questions. The Executive Committee endorsed the MTL, CTP and Proposed GS Training Continuum. They approved the training recommendations while referring the recommendation to delete the 6-Year Enlistment Program for further analysis. The **Phase IV** implementation and evaluation is underway.

The NTRR Executive Committee endorsed the Prototype Process with minor modifications, such as consolidation of SME conferences, and eliminating what were viewed as redundant OCCSTD and Training Task Analysis workshops. **Figure 11** depicts the revised process.

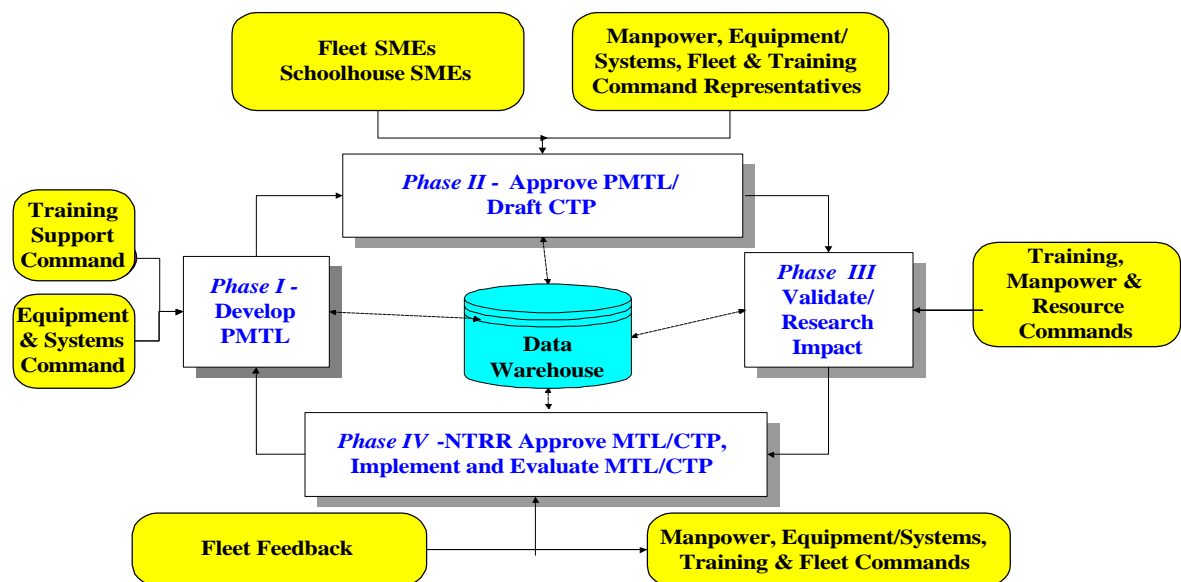


Figure 11. Revised Process

MTL/CTP AS A MANAGEMENT TOOL

The MTL/CTP provides the manager with a database of information from which to make informed decisions. It provides: (1) A cradle to grave listing of all the tasks required of an E1 to E9 sailor; (2) A listing of all the tasks required of an Apprentice-Journeyman-Master; (3) A database of all training required for a Navy rating, a platform, a piece of equipment, a job or billet, (4) A responsible training agent for every knowledge level and skill level task; (5) An established level of expected performance or proficiency for each task at critical points in a sailor's career; and (6) A reliable indicator of task criticality and training priority. It recognizes the apprentice-to-master based labor premise that a master teaches -- the apprentice learns. It provides the information needed to build closed loop detailing, if appropriate, and identifies a **career path** that builds systems masters and takes advantage of critical afloat or teaching billets. Rating Sponsors and Fleet Commanders have the information they need to implement an **'1-800-Tech'** assist concept, in which a centralized pool of experienced technicians, using video tele-maintenance and

interactive electronic technical manuals, supplement master technicians and provide conduits for teaching at sea.

The MTL/CTP provides the Navy Advancement Center with critical information essential for test development and later **advancement decision** making. It also provides Navy manpower and billet managers data on which to determine personnel requirements by platform and assess the impact of equipment changes on ship force structure.

Trainers and commands installing equipment and systems do not have to guess where **initial, advanced; refresher and supplementary training** are needed. It is clearly identified. They know where interactive courseware and other technology such as enhanced Video Tele-Training will shorten pipeline length and provide the right amount of training at the right time.

Most importantly, the MTL/CTP can be used to determine the **true cost of training**. The way training is defined within the Navy explains why we don't know how much training costs; it is not just formal, resident courses, but also sponsor-provided training, responsive training and alternative training such as CBT. The MTL/CTP process captures and quantifies all training. Differences in training provided on the same platform/equipment but requiring different levels of resource support can be identified. **Cost comparisons** can be made between extending a resident course vice establishing multiple 'fleet' or 'responsive' training courses to teach a specific topic or equipment. Currently such comparison cannot be made because there is no single database that contains this information.

SUMMARY

Developing a MTL/CTP for all Navy ratings will be a time consuming task initially, but we have an opportunity to **leverage** several on-going initiatives such as the Naval Afloat Maintenance Training Strategy (NAMTS); Aviation Maintenance Training Continuum System (AMTCS); and the Submarine Training Master Plan. Each of these programs is an effort to describe the skills and knowledge requirements of a specific ratings or community. Establishment of **minimum common data elements** among these efforts and the use of inter-operable electronic formats will lay the foundation for a data warehouse that provides on-demand access to support training decisions. After initial development, the MTL will be updated as changes occur. For example, updates can be driven by an addition or deletion of equipment, changes in equipment configurations, changes in the rate or paygrade of the person performing the tasks, changes in operating or maintenance procedures, or tasks modified by technology (such as the addition of imbedded diagnostics).

In recent years, the Navy has experienced significant losses in experienced personnel, which have the potential to impact mission capability. The Master Task List and Career Training Plan (MTL/CTP) process provides a new strategy for Navy training that identifies just enough training, just in time. The MTL/CTP establishes consensus about which tasks an individual in an occupation is expected to perform throughout a career. Using the list, managers can achieve immediate savings by identifying and eliminating inefficiencies in existing training. From this comprehensive list of all tasks, general tasks performed across ratings can be identified. Eliminating training duplication expedites further task analysis for other ratings. Task data was collected electronically, then stored in a database for analysis and to assist in decision-making processes. Implementation for the prototype GS rating indicated significant reductions in the length and cycle of NTRR conferences could be achieved. Additionally, the process demonstrates how attrition associated with the 6-year enlistment obligator program can be eliminated, with potential for significant cost savings.

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